FRAME ELEMENT FOR MOUNTING IN THE LOWER AREA OF THE BACK WINDOW OF A MOTOR VEHICLE AND A VEHICLE WITH ONE SUCH ELEMENT

Background of the Invention

Field of the Invention

[0001] The invention relates to a frame element for mounting in the lower area of the back window of a motor vehicle. Furthermore, the invention relates to a vehicle with such an element.

Description of Related Art

[0002] Published German Patent Application DE 44 41 853 A1 discloses a motor vehicle with a bumper which is located on the back end area of a motor vehicle and which can be moved a variable distance between a rest position and an extended position by at least one holding element. With the bumper in the extended position, it can be used as a carrier for cargo. The motor vehicle with the described bumper is suited for transport of cargos which can be placed on the bumper.

Summary of the Invention

[0003] A primary object of the present invention is to provide a frame element for mounting on a vehicle which enables diverse use of the vehicle as cargo carrier.

[0004] Furthermore, it is another object of the invention to provide available a vehicle with such a frame element.

[0005] These objects are achieved by the provision of a frame element which has a first mounting position framing the rear window of the motor vehicle and a second mounting position in which it is essentially horizontal for use as a cargo support.

[0006] The frame element of the invention is designed for mounting in the lower area of the back window of a vehicle, and the frame element can be mounted on the motor vehicle in a first mounting position framing the back window in part or completely and in the second

mounting position can be mounted on the vehicle essentially horizontally (therefore extended or folded out) for use as a cargo support.

[0007] The frame element of the invention can be integrated when not in use in an especially space-saving manner into the rear area and the area of the rear window of the motor vehicle. If necessary, the frame element can be pulled out or folded out, and due to its elevated mounting in the lower area of the back window, it also allows transport of bulky and larger cargos.

[0008] Advantageously, the frame element is made bow-shaped and can be stowed with little space consumption when not in use in the first mounting position on or in the vehicle. Cargos can also be reliably encompassed on several sides by the bow-shaped configuration.

[0009] According to another advantageous embodiment, the frame element is pivotally mounted via hinges on the vehicle so that the frame element when not in use can be folded essentially onto the outside of the motor vehicle in a space-saving manner. The interior of the motor vehicle remains freely available for other possible applications.

[0010] For safe transport when the frame element is in use and not in use it can be advantageously locked in the first and/or the second mounting position on the motor vehicle.

[0011] In order to keep the largest possible area of the back window free for viewing, it can be advantageous to push in the frame element in the first mounting position when not in use in the vehicle for countersinking. The frame element then disappears when not in use at least in part within the vehicle without the opening area of the back window being diminished.

[0012] By integrating the frame element in the first mounting position, when not in use, into the body of the vehicle, it does not detract from the overall visual impression of the motor vehicle. At first glance, it cannot be seen on the vehicle that there is a folding or extensible frame element for use as a cargo support in the rear area or in the lower area of the back window.

[0013] The possibilities of conveying cargos are expanded by the provision of an additional frame element for joint use with an existing frame element. The other frame

element is also mounted in the rear area of the motor vehicle, and jointly with the first frame element, can enable especially versatile attachment and conveyance of cargos.

[0014] The other frame element can be folded onto the vehicle in the first mounting position or can be countersunk into the vehicle. In this first mounting position, the other frame element is not in use and can thus be housed in a space-saving manner on or in the vehicle.

[0015] In the second mounting position, when used as a cargo support, the other frame element can be mounted essentially horizontally on the vehicle.

[0016] By the interaction of the two frame elements, cargos can be attached and transported in an especially versatile manner.

[0017] The vehicle as in accordance with the invention has a frame element as described above, and when the frame elements are not in use it, can be used as a conventional vehicle. If there is the necessity of transporting cargos, the frame element(s) of the invention can be pulled out of the vehicle or folded down from it so that, within a short time, a vehicle with distinctly improved transport possibilities is formed.

[0018] Embodiments of the invention are explained greater detail below with reference to the accompanying drawings.

Brief Description of the Drawings

[0019] Figure 1 shows a motor vehicle with a frame element in a second mounting position for use as a cargo support,

[0020] Figure 2 shows a motor vehicle as shown in Figure 1 with frame element in the first mounting position when not in use as a cargo support,

[0021] Figure 3 shows the motor vehicle as shown in Figure 2 with another embodiment of a frame element,

[0022] Figure 4 shows the motor vehicle with cargo attached to the frame elements, and

[0023] Figure 5 is a view similar to that of Figure 1, but illustrating an embodiment with a modified second mounting position.

Detailed Description of the Invention

[0024] Figure 1 shows a motor vehicle 2 with a first schematically shown frame element 1 (for example, made of a pipe or tube element) in an essentially horizontal second mounting position for use as a cargo support. Furthermore, another schematically depicted frame element 5 is, likewise, shown in the essentially horizontal second mounting position, likewise, for use as a cargo support, especially in conjunction with the frame element 1. The frame elements 1, 5 have U or bow shape and are used in the illustrated second mounting position also as collision protection.

[0025] In the intermediate spaces 7, 8, according to Figure 1, cargo can be held for transport on the vehicle 2 between the frame elements 1, 5 and the rear area 9 of the motor vehicle 2 (Figure 4), in a conventional manner, for example, by belts, screws or other fastenings,.

[0026] In Figures 1 & 2, the frame elements 1, 5 are mounted on the vehicle 2 via schematically shown hinges 3, 4 and 10, 11 and can be folded against the vehicle 2 in the directions 12, 13. Here especially, the frame element 1 can be folded against the vehicle 2 such that the back window 6 of the motor vehicle 2 is framed. Thus, a viewing area 14 through the back window 6 remains for unhindered use. The frame element 1 is mounted in the lower area 15 of the back window 6, and according to Figure 2, can be folded onto the back window 6 in the first mounting position when not in use, and thus, can be unobtrusively fitted into the rear body shape of the motor vehicle 2.

[0027] According to another embodiment as shown in Figure 3, the frame elements 1, 5, when not in use, can be pushed into the vehicle 2 in the first mounting position so that only the transverse members 16, 17 of the frame elements 1, 5 in the first mounting position can be viewed from the outside. In this way, the frame elements 1, 5 when not in use are likewise integrated unobtrusively into the rear body shape of the motor vehicle 2. The viewing area 14 through the back window 6 remains essentially unchanged.

[0028] In the embodiment shown in Figure 2, the back window 6 is framed by the transverse member 16 and the lengthwise members 18, 19 of the frame element 1.

[0029] In the embodiment shown in Figure 3, the back window 6 is partially framed by the transverse member 16 of the frame element 1.

[0030] Figure 4 shows the attachment of cargo 20 within the frame elements 1, 5 which are in the mounting positions. The cargo 20 can be secured to the frame elements 1, 5 in a conventional manner by belts, screw fasteners or other fasteners.

[0031] Figure 5 in which the frame element 5' has a reduced width and height to an extend that it can nest within the frame element 1 in the inactive, first position. In this case, the frame element 1 (shown in the second mounting position) is swung downward to its inactive, first mounting position about hinges 3, 4, (instead up to around the window) after the lower frame element 5' has been swung upward about the hinges 10, 11 to lie against the vehicle 2. Thus, in their inactive, first mounting positions, both frame elements 1, 5 lie flat against the rear door area 9 below the window 6 with the hinged legs of the frame element 1 flanking the outer sides of the hinged legs the frame element 5' with the cross piece of the frame element 1 lying below the frame element 5' and the cross piece of the frame element 5' lying just below the window 6.